Doc# NSCS-M-P-7093-02-46 Last Review Date: 12/03/2018
Title: Oil Separation Process Control Practices
Issue Dt: 10/01/2018
Revision Dt: 12/03/2018 Review Interval: 12
Cat: Quality Doc Type: SOP
Auth:
Desc: Oil Separation Process Control Practices
Loc: Midwest - Utilities-Midwest - Plant Maintenance-Midwest-Gary Works

Process Name	Operating Control System Monitor Method / Location	Frequency Recording data and abnormal conditions	Reference Procedure	Potential upset state Potential Abnormal condition(s)	Potential problem source	Reaction if Abnormal Conditions are Encountered
Oily Waste Pad Water Level	Visual inspection of pad	1 time per turn Operator: Record abnormal conditions on Form [redacted]	NSCS-M-P-7094-19	Water level above road elevation	Excessive rainfall	Contact Maintenance immediately to fix/replace the pumps and/or unplug the pad drain system.
Oily Waste Pad pH	Handheld pH meter Hach 3700 sc-series, or similar	During suspected upset Operator: Record abnormal conditions on Form [redacted]	NSCS-M-P-7094-19	pH S. [redacted] pH S.U. [redacted]	Spill or release of an acidic or basic material	If abnormal pH is suspected, the wastewater can be tested. Use proper handling and extra care if extreme pH ranges are likely. If outside the acceptable range, turn off the pumps at the lift station. Contact an outside contractor and have the oily waste pad neutralized, stabilized and turned into sludge for disposal at the Greenbelt II Landfill. If pumps cannot be turned off (such as during a rain event), close the valves between the north and south pads to minimize impact to Oil Pretreat. If a valve will not close, plug the pipe with an inflatable air bag.
North API Oil interceptor Tannin and Polymer Addition	Visual inspection of interceptor	4 times per turn Operator: Record abnormal conditions on Form [redacted]	NSCS-M-P-7093-02-45 NSCS-M-P-7093-02-13	Improper solids formation	Improper chemical addition	In the event flocculated solids are not formed, or the emsulfied oils are not separated to the surface, tannin and polymer may be dosed into the API oil interceptors to break the emulsions and for flocculated material. Turn on the pump skids.
[redacted] Pumps (Polymer) Tank Level	Visual inspection of tank level	2 times per turn Operator: Record tank level % on Form [redacted]	NSCS-M-P-7093-02-13	[redacted] Tank Volume	1) Level sensor may have failed 2) More product may be dosed than normal	1) Check the Operator Log for an unusual tank level rate of change. Contact Chemical Vendor for an emergency delivery if needed. Contact Instrument Repair to correct/replace the level sensor. 2) Check the pump settings and slowly dial back. Continue to maintain floc formation and target a [redacted] pump stroke/speed.
[redacted] Tannin Tank Tank Level	Visual inspection of tank level	2 times per turn Operator: Record tank level % on Form [redacted]	NSCS-M-P-7093-02-13	[redacted] Tank Volume	1) Level sensor may have failed 2) More product may be dosed than normal	1) Check the Operator Log for an unusual tank level rate of change. Contact Chemical Vendor for an emergency delivery if needed. Contact Instrument Repair to correct/replace the level sensor. 2) Check the pump settings and slowly dial back. Continue to maintain floc formation and target a [redacted] pump stroke/speed.

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North API Oil interceptor Surface Oils	Visual inspection of interceptor	Inspect 4 times per turn Skim as Needed Operator: Record skimmings on Form [redacted]	NSCS-M-P-7093-02-45 NSCS-M-P-7093-02-13	[redacted]	Potential leaks of oil from the production lines	If layer becomes too thick it can solidify. Use the water hose to direct the oil into the skimmer tube. If excessive oil is accumulating, contact the lines and ask them to check equipment and sumps for signs of leaked oil. Adjust the chemical feeds as required (see Tannin and Polymer Addition above). Increase the frequency of oil skimming.
North API Oil interceptor Color	Visual inspection of interceptor	4 times per turn Operator: Record abnormal conditions on Form [redacted]	NSCS-M-P-7093-02-13	1) White color 2) Tan/black color	1) Hydraulic oil 2) Rolling oil	Contact Production Managers for the Tin Mill Temper Mill, DCR and both 5 Stands. Contact the Final Treat Operator as effluent may upset the Final Treatment Plant. Increase the feed rate of the tannin [redacted] to break the emulsion. Ask the Production Managers to investigate and determine if a leak or other condition is occurring. If no abnormal conditions are apparent at the production lines, the Utility Helper will inspect the Oily Waste Pad.
North API Oil interceptor pH	Handheld pH meter Hach 3700 sc-series, or similar	4 times per turn Operator: Record pH on Form [redacted]	NSCS-M-P-7094-19 NSCS-M-P-7093-02-13	Significant Deviation from typical range [redacted]	1) Influent from Oily Waste Pad 2) Production line sumps	Contact the Utility Helper to inspect the Oily Waste Pad and determine if a low/high pH chemical had been dumped. Contact Production Managers for the Tin Mill Temper Mill, DCR and both 5 Stands. Ask the lines to investigate and determine if an abnormal condition is occurring. Also notify Final Treatment Plant Operator of the abnormal pH which may impact the treatment plant.
North API Oil interceptor Plant Air	Visual inspection of air injection	4 times per turn Operator: Record abnormal conditions on Form [redacted]	NSCS-M-P-7093-02-13	No surface agitation	Plant air injection port is clogged or valve is partially closed	Check the plant air valve is open and the injection end is not clogged. Cycle the valve to unclog the air line. If cycling does not remedy the issue, contact Utilities for repair.
North API Oil interceptor Steam Addition	Visual inspection of oil viscosity	4 times per turn Operator: Record abnormal conditions on Form [redacted]	NSCS-M-P-7093-02-45 NSCS-M-P-7093-02-13	Oils are solidifying	Steam injection has been turned off or the valve is partially closed	If the surface oils begin to solidify, make sure adequate steam is injected. Adjust the setpoint on steam control valve if needed. If no steam is available, contact the Utility Manager. Skim the oil more frequently to minimize oil accumulation.

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South (Monroe) interceptor Surface Solids	Visual inspection of surface oils	2 times per turn Operator: Record abnormal conditions on Form [redacted]	NSCS-M-P-7093-02-45	Excessive oils are accumulating	1) Skimmer may have failed 2) Excessive oils may be passing through from the North API Interceptor	1) Oils should be minimal in the effluent of the interceptor. If not, check the skimmer for proper operation. Contact Maintenance if needed. 2) Check the North API Interceptor for proper oils removal. See “North API Oil interceptor Surface Oils” above.
Dissolved Air Flotation (DAF) Units Fine Bubbles	Visual inspection of surface oils and fine bubble addition	2 times per turn Operator: Record abnormal conditions on Form [redacted]	NSCS-M-P-7093-02-45	No fine bubbles observed	Air Blower failure	If bubbles are not visible, check the air blower. If there is oil accumulation in the effluent trough, check upstream treatment for operation issues. Contact Maintenance if needed.
North and South Oil Storage Tank Tank Level	Visual inspection of level gage	2 times per turn Operator: Record tank levels on Form [redacted]	NSCS-M-P-7093-02-13	1) [redacted] Tank Level 2) [redacted] Tank Level (Winter)	1) Vendor may not have processed oil at an adequate rate 2) Vendor is processing oil too quickly.	1) If the tank level is above the acceptable range, decant to the interceptor to avoid an overflow. Notify Vendor to increase processing rate. 2) If winter tank level is low, transfer material from the interceptor sump, ensure steam is on and hold material until level returns to normal operating range.